

Intro to Night Sky Photography Cheat Sheet

Here are some starting camera settings for night photography. Keep in mind that the ideal settings will vary depending on your camera, lens, and shooting conditions (such as moon phase, sky darkness, and aurora brightness). Begin with these suggestions and adjust as needed. Use the PhotoPills app to help calculate the exposure time needed to capture sharp, pinpoint stars in your image. For all night photography, we recommend that you:

- Set camera to Manual Mode
- Set focus to infinity (focus on bright star or moon)
- Shoot in Raw
- Turn off Image Stabilization when using a tripod
- Turn off Noise Reduction unless you don't mind waiting the extra time for in-camera noise reduction
- Use a remote shutter release or set a shutter delay of 2 seconds (5 seconds if windy)

Milky Way Photography

- Focal length: shortest you can (12mm, 14mm, 24mm)
- Aperture: f2.8 or lower
- Shutter Speed: 12-20 seconds to avoid star trails (use NPF Rule – Spot Stars in PhotoPills app)
- ISO: 3200 – 6400
- White Balance: set between 3200K and 3900K

Comet Photography

- Focal length: wide-angle 14mm to 18mm is OK, but consider using a telephoto such as a 24-70 f2.8 or 70-200 f2.8 for closer image of comet.
- Aperture: f2.8 or lower
- Shutter Speed: will depend on brightness of comet and your focal length. Use NPF Rule to calculate exposure time (Spot stars in PhotoPills app). 5 to 10 seconds commonly used.
- ISO: 1600-3200 for bright comets; 3200-6400 for faint comets
- White Balance: set between 3200K and 3900K

Aurora Photography

- Focal length: shortest you can (12mm, 14mm, 24mm) to capture the most aurora, especially if it fills the sky and above you
- Aperture: f2.8 or lower
- Shutter Speed: 1-10 seconds – the faster the aurora movement, the shorter your speed
Faint/Static auroras: 8 to 10 seconds
Vibrant/moving auroras: 2 to 5 seconds
Very Strong/Active auroras: 0.5 to 3 seconds
- ISO: 3200 – 6400
If photographing during full/bright moon, lower ISO between 800-3200
- White Balance: personal preference – start at 3800K to 4000K and adjust to your preference
the lower the number, the cooler (more blue) your image will be

Star Trails

- Focal length: shortest you can to include more of the sky
- Aperture: f2.8 or lower
- ISO: 3200 – 6400
- White Balance: set between 3200K and 3900K

A camera can capture the trails the stars make in one of two ways

1. A single long exposure - 20 minutes or more
2. A series of shorter exposure pictures, using software to combine the pictures based on the lightest parts (I use StarStaX. Photoshop can do this also). I will usually use the 'intervalometer' function on my camera to take a 10 sec exposure every 15-20 seconds. I'll let that run for at least 20 minutes. You can also do a continuous series by locking a remote shutter open.